Product brief

NLM0011 and NLM0010

Dual-mode NFC configuration ICs with pulse width modulation (PWM) output

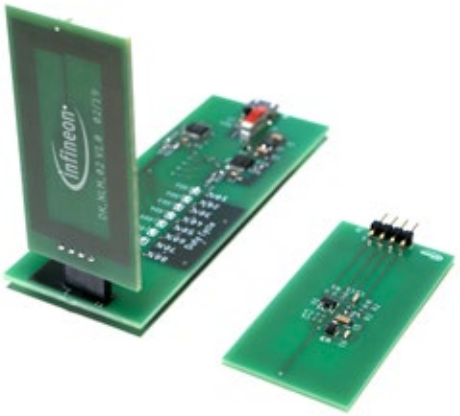
The NLM0011 is a dual-mode NFC wireless configuration IC with PWM output. It is compatible with existing analog LED-driver designs and with the NFC-programming specification from the Module-Driver Interface Special Interest Group (MD-SIG).
This device is primarily designed for LED applications to enable NFC programming. In addition, advanced features such as the constant lumen output (CLO) as well as the on/off counting are integrated, and there is no need for an additional microcontroller. Since the NLM0011 is designed to work together with mainstream analog driver ICs, there are no firmware development efforts needed. It can be easily adapted into existing designs to replace the “plug-in resistor” current configuration concept. The NLM0010 is a light version without CLO function.

The NLM0011 operates in two operating modes: passive and active mode. In the passive mode, where no V_{CC} voltage supply is applied, PWM parameters can be configured wirelessly via the NFC interface. In active mode, as soon as the V_{CC} voltage supply is applied, a PWM output is generated according to the stored PWM parameters. With an external R/C filter, the PWM signal is converted to the desired DC voltage to control the current output of the LED driver. With an integrated operation-time counter and the LED degradation curve stored in the CLO table, the PWM signal is automatically adjusted to compensate for the LED degradation.

Applications

› Primarily designed for lighting application
› Applications which use a PWM or a DC voltage as control signal

EVAL_NLM0011_DC – evaluation board demo kit

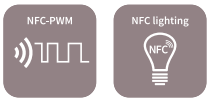


Key features

› Configurable pulse width modulation (PWM) output
› NFC contactless interface compliant to ISO/IEC 18000-3 mode 1 (ISO/IEC 15963)
› Constant light output (CLO) with 8 configurable reference points
› Integrated operation-time counter (OTC) and on/off counter
› Non-volatile memory (NVM) including UID and 20 bytes free memory for user data

Key benefits

› Fast and cost effective implementation of NFC programming and CLO without the need of an additional microcontroller
› Compatible with most analog LED driver designs using “plug-in resistor” method
› Stable PWM output with fixed 2.8 V amplitude and ±0.1% duty cycle accuracy
› Internal voltage regulator (LDO) to avoid influence of instable external supply voltage
› Compatible with the MD-SIG “NFC Programming Specification”

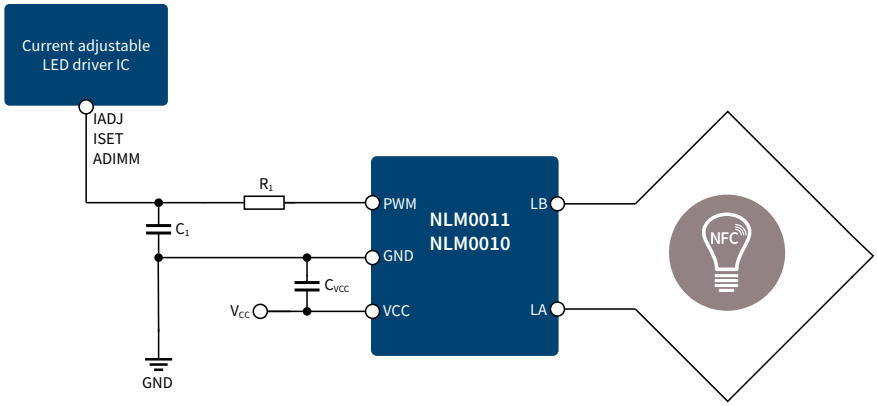


www.infineon.com/NFC-PWM

NLM0011 and NLM0010

Dual-mode NFC configuration ICs with pulse width modulation (PWM) output

Typical example of NFC lighting application



Ease of identification and authentication

The near-field communication (NFC) ensures that only objects at a defined physical position are contacted and programmed, significantly reducing the complexity of the identification and authentication process.

Flexibility and compatibility of LED driver and module

NFC programming enables the continuous adjustment of the light output level. Programming to match LED drivers to the modules can be done precisely at any time.

Improved operational efficiency

In a system consisting of an NFC reader and an NFC tag, the tag can operate without an external power supply. The power is supplied by the energy sent by the NFC reader and harvested in the RF field. Thus, an object equipped with an NFC tag can be programmed in a moving assembly line without the need to connect to a power supply, significantly improving operational efficiency.

Efficient product management reducing total ownership cost

The current level can be set automatically in the manufacturing line, saving labor costs. Enhanced supply chain flexibility and reduced logistics costs are also possible as the system can be adjusted just before shipping to distribution centers. Logistics complexity related to the national standards is reduced thanks to destination standard based NFC configuration features.

Postproduction reprogramming

The NFC feature allows for additional setup options such as individual on-site room lighting configuration.

Product portfolio

Type	Ordering code	Package	OPN
NLM0011	SP002187978	SOT23-5	NLM0011XTSA1
NLM0010	SP003094824	SOT23-5	NLM0010XTSA1

Software and tools

Type	Ordering code	Description	OPN
EVAL_NLM0011_DC	SP005298736	Evaluation board demo kit	EVALNLM0011DCTOBO1
EVAL_NLM0011_DC_RE	SP005298750	Evaluation board demo kit incl. NFC reader	EVALNLM0011DCRETOBO1

Published by
Infineon Technologies Austria AG
9500 Villach, Austria

Order Number: B121-I0878-V1-7600-EU-EC-P
Date: 08 / 2019